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Senior Research Professor, Department of Meteorology
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RESEARCH EXPERTISE: Atmospheric Chemistry: Modeling and measurements of trace gases, air-sea gas exchange, ozone and convective systems, lightning, biomass burning. Remote sensing: Ozone. Global Change: Simulation of future and pre-industrial troposphere.

EDUCATION: 1970 - B.A. (Honors), Swarthmore College, 1972 - M.A., Princeton University; 1978 - Ph.D., Physical Chemistry, Bryn Mawr College

POSITIONS: 1978 - 1979, Woods Hole Oceanographic Institution, Woods Hole, MA 02543, Postdoctoral Scholar; 1979 - 1981, Univ. California - Scripps Institution of Oceanography, LaJolla, CA 92093, Postgraduate Marine Chemist; 1981 - 1984, National Center for Atmospheric Research (NCAR), Boulder, CO 80307, Visiting Scientist; ASP Postdoctoral Fellow; 1984 - 1986, Applied Research Corporation, Landover, MD 20785, Contract Scientist at NASA/GSFC; AST, Atmospheric Chemistry and Dynamics Branch, Lab. for Atmospheres, NASA/Goddard Space Flight Center, 1986-present

MEMBERSHIPS: AAAS, AMS, AGU -- Member and Fellow; AWIS; Am. Chemical Society

AWARDS: 1970, BA with Honors (External Examination), Phi Beta Kappa, Sigma Xi, Phila. Chapter Am. Chemical Society Best Student Award; NSF Predoctoral Fellowship
1987, 1989, 1995 - GSFC Director's Discretionary Fund; 1990-1996, 1998-2002, GSFC Performance Awards; 1992 - Goddard Equal Opportunity Award; 1993, 2001 - GSFC Lab. for Atmospheres Peer Award; 1995 – NASA Exceptional Achievement Medal.
1995 Fellow, American Meteorological Society
1998 Nordberg Medal, COSPAR (Committee for Space Research)
2002 Fellow, American Association for Advancement of Science
2003 Fellow, American Geophysical Union

SPECIAL EXPERIENCE: Research & Projects

- 1) PI on NASA Project: "Tropospheric Photochemical Modeling" 1984-present. Also PI on EPA and NOAA Interagency Agreements, 1985-present.
- 2) EOS-IDS Teams: Stratospheric Chemistry and Dynamics (M. Schoeberl, PI); Biogeochemical Fluxes at Air-Sea Interface (P. Brewer, PI); Chemistry-Climate Interaction (D. Jacob, PI)
- 3) NASA Satellite & Aircraft Science Teams: TOMS Science Team, 1994-present; GTE/TRACE-A; PEM-Tropics-B, TRACE-P; UARP/ STRAT, POLARIS, ACCENT, SAFARI-2000
- 4) Oceanographic cruises, *Knorr* 73/7, 1978; Soviet-American Gases and Aerosols (SAGA 3), 1990; Aerosols99 Cruise, *R/V R H Brown*, 1-2/99
- 5) Co-Mission Scientist, SONEX (SASS Ozone and Nitrogen Experiment), 1997
- 6) NASA HQ Detail: Project Scientist, AEAP/Subsonic Assessment (SASS), HQ Office of Aeronautics, 1993-1994

- 7) **SHADOZ PI** (Southern Hemisphere Additional Ozonesondes, 1997-present) and Field Work - Aerosols99 Cruise, PAUR II, 1999 (Crete); SAFARI-2000, Zambia

Service & Committees

- 1) **AGU**: Education and Human Resource Committee, 1986-1988; Editorial Advisory Board, *Earth in Space*, 1988-1990; Secretary, AGU Atmospheric Sciences Section, 1990-1992; AGU Publications Committee, 1994-1996; Associate Editor, *Journal of Geophysical Research*, 1992-1996; Chair, GRL Editors Search Committee, 1995-1996; Member, JGR-Atmospheres Editors Search Committee, 1996; Chair, 1999-2000.
- 2) **AMS**: Atmospheric Chemistry Committee, 1996-1998; AMS Council and Executive Council, 2001-2004
- 3) **International Societies**: (A) Commission on Atmospheric Chemistry and Global Pollution (CACGP), 1994-2002. President, 2002-2006. (B) Member, International Ozone Commission, 1996-2004; Program Committee, Quadrennial Ozone Symposium (1992). (C) IGBP/IGAC Steering Committee (2000-2002)
- 4) **Global Change and Assessments**: Rapporteur, Workshop on UV Effects on Aquatic Systems, 1989; Working Group 1, IPCC (Intergov. Panel on Climate Change) 1989; Rapporteur, NASA/NOAA /EPA Workshop on Global Warming Potentials, 1990; Lead Author, Tropospheric Ozone Chapter, UNEP/WMO 1998 Ozone Assessment.
- 5) **NSF-NAS/NRC**: Chair, NSF, NCAR-Atmos. Chemistry Div. Review Panel, 1996. NAS/NRC Committee - Major Ocean Programs (1996-1998); NAS/NRC Climate Research Committee (1996-2000)

Education & Outreach:

- 1) **Adjunct Professor** - University of Maryland Earth Systems Science Interdisciplinary Center (ESSIC), 2000-present; previously JCESS Fellow, 1995-2000. Course Taught: Atmospheric Chemistry & Physics, 2002.
- 2) **Adjunct Research Professor** (Thesis Committees): Univ. Miami (Rosenstiel School), NC State, Florida State Univ.
- 3) **Students Advised/Co-advised**: PhD -- C. Herbster, Florida State Univ. (1998), S. A. Yvon, U. Miami (1990-95); J-H Kim, U. Maryland (1996), D. J. Allen (1998); Masters – C. Phelps, U. Maryland (1995), R. M. Todaro, U. Maryland (1997), H. Guo, U. Maryland (1999); M. G. Seybold, NC State (1999).
- 4) External Examiner or Student Host/Co-author: G. Bodeker (U. Natal, So. Africa, 1995), D. Jeker (ETH-Zürich, 1999), K. Longo (U. Sao Paulo, 1998), W. Peters (U. Utrecht, Netherlands, 2002)
- 5) GSFC Programs: Summer Institute Atmos. Sciences, Coordinator 1987-1989; Education Office, Public Affairs Speaker, 1988-Present; Summer Advisor: 1989, D. Davidoff, Yale; 1996, N. Dang, UNH; 1993-94, K. Patterson, Salisbury State and UCSB; 1996, M. Lakin, UC-Irvine

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1. A. M. Thompson, The photochemical *cis-trans* isomerization of azomethane: A kinetic investigation, Ph.D. Thesis, Bryn Mawr College, 1978.
2. A. M. Thompson, P. C. Goswami, and G. L. Zimmerman, A kinetic analysis of the photochemistry of alkyl diazenes in hydrocarbon solution, *J. Phys. Chem.*, **83**, 314-320, 1979.
3. A. M. Thompson, Wet and dry removal of tropospheric formaldehyde at a coastal site, *Tellus*, **32**, 376-383, 1980.
4. A. M. Thompson and R. J. Cicerone, Clouds and wet removal as causes of variability in the trace gas composition of the marine troposphere, *J. Geophys. Res.*, **87**, 8811-8826, 1982.
5. A. M. Thompson and O. C. Zafiriou, Air-sea fluxes of transient atmospheric species, *J. Geophys. Res.*, **88**, 6696-6708, 1983.
6. B. G. Heikes and A. M. Thompson, Effects of heterogeneous processes on NO_3 , HONO , and HNO_3 in the troposphere, *J. Geophys. Res.*, **88**, 10,883-10,895, 1983.
7. A. M. Thompson, The effect of clouds on photolysis rates and ozone formation in the unpolluted troposphere, *J. Geophys. Res.*, **89**, 1341-1349, 1984.
8. A. M. Thompson and D. H. Lenschow, Mean profiles of trace reactive species in the unpolluted marine surface layer, *J. Geophys. Res.*, **89**, 4788-4796, 1984.
9. A. M. Thompson and R. J. Cicerone, Possible perturbations to atmospheric CO , CH_4 , and OH , *J. Geophys. Res.*, **91**, 10,853-10,864, 1986.
10. A. M. Thompson and R. J. Cicerone, Atmospheric CH_4 , CO , and OH from 1860-1985, *Nature*, **321**, 148-150, 1986.
11. A. M. Thompson, R. W. Stewart, M. A. Owens, and J. A. Herwehe, Sensitivity of tropospheric oxidants to global chemical and climate change, *Atmos. Environ.*, **23**, 519-532, 1989.
12. R. W. Stewart, A. M. Thompson, M. A. Owens, and J. A. Herwehe, Comparison of parameterized nitric acid rainout rates using a coupled stochastic-photochemical tropospheric model, *J. Geophys. Res.*, **94**, 5219-5226, 1989.
13. A. M. Thompson, M. A. Owens, and R. W. Stewart, Sensitivity of atmospheric hydrogen peroxide to global chemical and climate change, *Geophys. Res. Lett.*, **16**, 53-56, 1989.
14. C. J. Nappo, J. A. Herwehe, and A. M. Thompson, Observations of ozone profiles in the developing convective boundary layer, *Ozone in the Atmosphere*, edited by R. D. Bojkov and P. Fabian, pp. 477-480, A. Deepak Publishing, 1989.

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15. A. M. Thompson, Atmospheric chemical and climate change: Possible effects on tropospheric ozone, *Ozone in the Atmosphere*, edited by R. D. Bojkov and P. Fabian, pp. 580-583, A. Deepak Publishing, 1989.
16. A. M. Thompson, Effects of atmospheric chemical and climate change on tropospheric ozone, *Ozone Sci. and Engin.*, **7**, 177-194, 1990.
17. R. W. Stewart, A. M. Thompson, and M. A. Owens, Atmospheric residence times for soluble species: Differences in numerical and theoretical model results, *Atmos. Environ.*, **24A**, 519-524, 1990.
18. K. E. Pickering, A. M. Thompson, R. R. Dickerson, W. T. Luke, D. P. McNamara, P. R. Zimmerman, and J. P. Greenberg, Model calculations of tropospheric ozone production potential following observed convective events, *J. Geophys. Res.*, **95**, 14049-14062, 1990.
19. A. M. Thompson, M. A. Huntley, and R. W. Stewart, Perturbations to tropospheric oxidants, 1985-2035: 1. Model calculations of ozone and OH in chemically coherent regions, *J. Geophys. Res.*, **95**, 9829-9844, 1990.
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22. A. M. Thompson, M. A. Huntley, and R. W. Stewart, Perturbations to tropospheric oxidants, 1985-2035: 2. Model calculations of hydrogen peroxide in chemically coherent regions, *Atmos. Environ.*, **25A**, 1837-1850, 1991.
23. A. M. Thompson, Interaction of atmospheric chemical and climate change: implications for tropospheric ozone, in *Atmospheric Chemistry: Models and Predictions for Climate and Air Quality*, ed. C. S. Sloane and T. W. Tesche, Lewis Pub., Boca Raton, FL, 1991, pp. 47-61.
24. A. M. Thompson and R. W. Stewart, How chemical kinetics uncertainties affect concentrations computed in an atmospheric photochemical model, *Chemometrics and Intelligent Laboratory Systems*, **10**, 69-79, 1991.
25. K. E. Pickering, A. M. Thompson, J. R. Scala, W-K. Tao, J. Simpson, and M. Garstang, Photochemical ozone production in tropical squall line convection in ABLE 2A, *J. Geophys. Res.*, **96**, 3099-3114, 1991.
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27. A. M. Thompson, New ozone hole phenomenon, News and Views in *Nature*, **352**, 282-283, 1991.

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28. Commentary by K. B. Hogan, A. M. Thompson, and J. S. Hoffman, Methane on the greenhouse agenda, *Nature*, **354**, 181-182, 1991.
29. K. S. Law and J. Pyle, A. M. Thompson, Discussion on modelling the response of tropospheric trace species to changing source gas concentrations, *Atmos. Environ.*, **26A**, 195-197, 1992.
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31. K. E. Pickering, J. R. Scala, A. M. Thompson, W.-K. Tao, and J. Simpson, A regional estimate of convective transport of CO from biomass burning, *Geophys. Res. Lett.*, **19**, 289-292, 1992.
32. A. M. Thompson, K. B. Hogan, and J. S. Hoffman, Methane reductions: Implications for global warming and atmospheric chemical change, *Atmos. Environ.*, **26A**, 2665-2688, 1992.
33. A. M. Thompson, The oxidizing capacity of the Earth's atmosphere: Probable past and future changes, *Science*, **256**, 1157-1165, 1992.
34. K. E. Pickering, A. M. Thompson, J. R. Scala, W.-K. Tao, R. R. Dickerson, and J. Simpson, Free tropospheric ozone production following entrainment of urban plumes into deep convection, *J. Geophys. Res.*, **97**, 17985-18000, 1992.
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38. A. M. Thompson, J. E. Johnson, A. L. Torres, and 10 others, SAGA-3 ozone observations and a photochemical model analysis of the marine boundary layer during SAGA-3, *J. Geophys. Res.*, **98**, 16955-16968, 1993.
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47. A. M. Thompson, Aspects of modeling the tropospheric hydroxyl radical concentration, *Israel J. Chem.*, **34**, 277-288, 1994.
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50. C. W. Brown, W. E. Esaias, and A. M. Thompson, Using the ratio of euphotic depth to mixed-layer depth to predict phytoplankton composition: An evaluation, *Remote Sensing of Env.*, **53**, 172-176, 1995.
51. R. D. Hudson, J. Kim, and A. M. Thompson, On the derivation of tropospheric column ozone from radiances measured by the total ozone mapping spectrometer, *J. Geophys. Res.* **100**, 11137-11145, 1995.
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67. R. W. Stewart and A. M. Thompson, Kinetic data imprecisions in photochemical rate calculations: Means, medians and temperature dependence, *J. Geophys. Res.*, **101**, 20,953-20,964, 1996.
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72. A. M. Thompson, Evaluation of biomass burning effects on ozone during SAFARI/TRACE-A: Examples from process models, in *Biomass Burning and Global Change*, ed. J. S. Levine, MIT Press, Chapter 32, 1996.
73. A. M. Thompson, K. E. Pickering, D. P. McNamara, M. R. Schoeberl, R. D. Hudson, J. H. Kim, E. V. Browell, V. W. J. H. Kirchhoff, and D. Nganga, Where did tropospheric ozone over southern Africa and the tropical Atlantic come from in October 1992? Insights from TOMS, GTE/TRACE-A and SAFARI-92, *J. Geophys. Res.*, **101**, 24,251-24,278, 1996.
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